LAND USE, PLANNING, AND INFRASTRUCTURE ACTIONS FOR ESTUARY/NEARSHORE (Migratory Tier 1)	
POLICY/INSTITUTIONAL CONTEXT: ***Jurisdictions:*** Seattle, Shoreline, Woodway, Edmonds, Mukilteo, Snohomish County ***Growth pressures (inside UGA):*** All jurisdictions; note Snohomish Co. area includes Mukilteo and Edmonds MUGAs ***Percent of basin inside UGA:*** 100% ***Program/mitigation opportunities:*** Sno Co. Marine Resources Advisory Committee; Sound Transit mitigation; PSNERP; Brightwater mitigation (outfall?)	**SCIENCE CONTEXT:** ***Watershed evaluation rating:*** Not applicable ***Watershed evaluation summary:*** Not applicable **Note:** Approximately 54% of the WRIA 8 marine shoreline lies within Snohomish County; the remaining 46% lies in King County.

LAND USE ACTIONS FOR ESTUARY/NEARSHORE BASED ON TECHNICAL RECOMMENDATIONS IN WRIA 8 CONSERVATION STRATEGY

Notes:

1) Technical priorities from the WRIA 8 Conservation Strategy are listed in bold; recommended land use actions are listed for each technical area. Most technical recommendations are interrelated; many land use actions address multiple technical priorities.
2) Note that local jurisdictions in these subareas are doing or planning to do many of these actions.
3) See also Appendix D for a menu of land use actions described by criteria, and references on low impact development, critical areas and other land use topics.
4) Land use recommendations were not developed for the Locks/Ship Canal. However, local jurisdiction staff who met to develop the site specific project list for this area discussed some land use and programmatic issues; their recommendations appear on the first page of the site specific project list under "Subarea-Wide Projects."
5) A number of regulatory measures recommended below might be administered through local Shoreline Master Programs or Critical Areas Ordinances. Nearshore jurisdictions should strive for consistency with Ecology's *Washington State Shoreline Master Program Guidelines*, referenced below.

Protect remaining feeder bluff that supplies sediment and supports littoral habitat creation.

M1 Bluffs on Magnolia and Discovery Park in Seattle are the only ones in WRIA 8 that are not armored by the railroad and have some unarmored locations (publicly and privately owned). Prohibit bulkheads or any other form of armoring and development at these locations through Seattle's critical areas ordinance and Shoreline Master Program.

Reduce bank hardening, especially in areas where the armoring falls within the tidal zone and/or separates a sediment source from the nearshore environment. Such actions would help restore natural shoreline accretion and depletion processes and support littoral habitat creation.

M2 Support King County-funded sediment source study to 1) establish where feeder bluffs were prior to the railroad and 2) qualitatively assess rates of erosion and sediment contribution of those bluffs. Based on study results, open up certain slide prone areas so that slides make it into the nearshore (e.g., by building trestles under railroad), and/or investigate appropriateness of a beach nourishment program. Expect study completion by 3/05.

M3 Use results from King County sediment source study to map those bluffs that are most critical to protect (to preserve future opportunities to restore them to natural function), and protect them from future development through critical areas ordinance and/or Shoreline Master Program updates or acquisition. Note that the issue of protecting feeder bluffs must balance health and safety with ecological needs. Steep slopes that are already developed need to be protected from erosion as a health and safety issue. However, where steep slopes are not developed, future development should be prohibited so that these areas provide vegetative cover and potential sediment sources in the future. Development that does occur should be setback further from the top of the bluff for health and safety reasons.

- See stormwater management recommendations below under *water quality*; drainage issues throughout sub-area and from development near tops of bluffs have significant impacts on bluff stability.

M4 Residential, commercial, and industrial development west of the railroad (e.g. Nakeeta Beach residential community, Meadowdale Marina, Point Wells, Richmond Beach) should be addressed in various ways:

- ✓ Prohibit new development, at least in areas designated as conservancy.
- ✓ Determine if there are failing septic systems, and require that they be fixed. Require that septics be inspected at time of sale.
- ✓ During redevelopment in any of these areas, reduce overall impacts to nearshore, e.g., limit additional riprap to that required to protect structures, require riparian revegetation, avoid construction in intertidal zone, use smallest feasible footprint for structures.
- ✓ Seek opportunities to redevelop industrial sites into less intensive uses.
- ✓ Protect nearshore from water quality impacts including spills at industrial sites.
- ✓ In the long term, if site specific projects are pursued "to remove structures, fill, and bulkheads" through fee simple purchase of parcels, address any regulatory or programmatic actions which are needed to support these projects.

M5 Wherever possible, offer incentives or regulatory flexibility to encourage bank softening in Salmon Bay. Note that opportunities are limited due to topography, lot size, and structure location close to the water.

M6 Work with Dept. of Ecology and Burlington Northern Railroad (BNRR) to revise policies that address how slide material on or near the track is handled after a slide. One option would be to encourage side-casting slide debris/sediment into the nearshore rather than removing all of it from the site. Note that side-casting is controversial because it buries existing invertebrate and plant communities, but would be mimicking natural processes if not for the railroad.

Protect remaining Marine Riparian Vegetation (MRV), to maintain overhanging cover and terrestrial inputs (e.g. leaf litter, invertebrates) for juvenile chinook and their prey.

M7 Protect remaining nearshore vegetation (on low or high bluffs) through regulation and/or acquisition. Regulatory tools to protect vegetation on bluffs, and to prevent further development on and near the top of bluffs, include:

- ✓ Steep slope ordinances
- ✓ Bald eagle protection ordinances
- ✓ Critical areas ordinances
- ✓ Clearing ordinances

Plant vegetation along shoreline, close to the Mean High High Water (MHHW) line to provide overhanging cover and terrestrial inputs (e.g. leaf litter, invertebrates) for juvenile chinook and their prey.

M8 Develop and offer incentives to encourage bulkhead removal/redesign and revegetation along shoreline, including:

- ✓ Offer regulatory flexibility during redevelopment (e.g., encourage variances from front yard setbacks to avoid variances from backyard setbacks that would cause development to encroach further toward the shoreline; allow modest increase in lot coverage or reduction in building setback in exchange for restoring shoreline vegetation)
- ✓ Provide expertise (e.g., provide templates for shoreline planting plan, bulkhead design)

- ✓ Expedite permit process at local, state and federal levels (e.g., allow more restoration activities as shoreline exemptions to make permitting faster and less costly)

M9 Promote educational programs (e.g., Island County Beach Watchers) to promote stewardship among homeowners along nearshore and estuary, as such educational programs increase the effectiveness of regulatory and incentive approaches.

Reduce number and coverage of overwater structures (e.g., docks, piers) to reduce segmentation of shoreline and effects on both habitat forming processes and juvenile chinook behavior.

M10 Prohibit new residential overwater structures. For new public facilities (e.g., ferry docks), incorporate salmon-friendly design features and mitigate for unavoidable impacts.

M11 Retrofit existing overwater structures with salmon friendly design features. Remove overwater structures and pilings when possible.

M12 Offer incentives to build community docks to replace individual docks in Salmon Bay.

M13 Use guidelines for marine overwater structures (see references below) to develop specifications. If applicant meets specifications, offer expedited local/state/federal permitting (similar to concept being promoted for Lake Washington overwater structures by NOAA Fisheries and other agencies). Guidelines should include: overwater structure design and materials that increase light penetration under the dock (e.g., increase height, decrease width, use grating), elimination of construction materials that may release environmental contaminants.

Protect or reconnect small stream mouths to create pocket estuaries.

M14 Protect any further degradation to stream mouths through Shoreline Master Programs and critical areas ordinances.

M15 Address water quality and quantity (high and low flows) in creeks draining into Puget Sound, through improved stormwater management programs and regulations. (See additional stormwater recommendations below under *water quality*.)

M16 Replace culverts with open bottom culverts or bridges/trestles wherever possible to allow for sand and gravel, LWD, and terrestrial inputs to contribute to the nearshore.

Reconnect backshore areas (e.g., marshes, wetlands) to contribute to shoreline habitat diversity and terrestrial inputs.

M17 Enforce critical areas regulations to prevent further loss of wetlands.

M18 Once wetlands are restored, protect from impacts from development through buffer requirements and stormwater management programs.

Protect sediment and water quality, especially near commercial and industrial areas (e.g., fuel spills, discharge of pollutants, etc.).

M19 Address stormwater impacts throughout sub-area and from development near tops of bluffs. Actions include:

- ✓ Protect water quality through NPDES Phase 1 and 2 permits and improved stormwater regulations, consistent with Dept. of Ecology's 2001 Stormwater Management Manual.
- ✓ Require or encourage low impact development
- ✓ Retrofit existing developments using natural drainage systems (e.g., SEAStreets in Pipers Creek)
- ✓ During redevelopment, reduce impervious area, increase native vegetation and use of pervious surfaces.
- ✓ See basin-wide discussion of stormwater standards in Appendix D (including Dept. of Ecology's 2001 Stormwater Management Manual, PSWQAT stormwater guidelines, Tri-County stormwater standards).

M20 Determine extent to which residential structures along nearshore are on septic systems; determine if these systems are operating properly and if not require that they be fixed. Require that septic systems be inspected at time of sale.

M21 Discourage or prohibit any further filling and dredging in nearshore except for essential public facilities and where associated with shoreline restoration projects. See dredging guidelines below.

Other programmatic efforts not tied to specific technical recommendations:

M22 Revise the "Prohibited Work Times in Saltwater Areas" listed in the Washington Hydraulic Code Rules (WAC 220-110-271). The saltwater closure periods listed in the Washington Administrative Code (WAC) are out of date. The juvenile salmonid closure period corresponds with the timing of chum and pink salmon, and not ESA listed Chinook. While WDFW area habitat biologists have leeway in modifying the work closure timing, it would be prudent to correct the WAC with more accurate salmonid timing data. [action suggested by WRIA 8 Technical Cmt]

References for further information:

The local jurisdictions that worked on these land use actions wanted to refer to the following technical references (see complete citations and web links in Appendix D, Part 6):

- Wash. Dept of Ecology's Shoreline Master Program Guidelines
- Wash. Dept. of Community, Trade and Economic Development critical areas handbook
- Puget Sound Water Quality Action Team's "Growth Management Updates" guidance
- References for marine overwater structures: G.D. Williams et al. May 2001; Nightingale, Barbara and Charles Simenstad. May 2001.
- References for marine dredging: Nightingale, Barbara and Charles Simenstad. July 2001.